2.   **ABSTRACT**

0143 A method and apparatus mitigating the effects of cross-correlation signals on received satellite signals in a Global Positioning System (GPS) receiver is described. A GPS search mode architecture is used to detect SV signals and identify potential cross-correlations. The GPS search modes have different coherent integration lengths and different degrees of sensitivity. After detection, measurements are logged into a database for further processing. Several cross-correlation tests are described. For example, a "Mainlobe" cross-correlation test is described that identifies the most significant cross-correlations that occur when the Doppler difference between the interfering SV signal and the target SV signal is nonzero and a multiple of 1 kHz. Appropriate C/No and Doppler thresholds, or masks, are selected and used to identify the mainlobe cross-correlations. A wide Doppler mask is used to account for the effects on cross-correlations caused by BPSK data bit modulation. A "variable C/No" cross-correlation test is described that accounts for the effects on cross-correlations when the Doppler difference between an interfering SV and a target SV is high. A "strong" cross-correlation test is used to detect combined cross-correlations generated when two or more signals fall very close to each other in both code phase and Doppler frequency. A "wide Doppler" test is used when multiple SVs concurrently transmit signals that are relatively close in Doppler frequency, but not sufficiently close as to produce a cross-correlation peak of very strong energy. A pre-emptive cross-correlation test is described that performs cross-correlation testing early in the SV signal search process.